



# Analysis of the European electric transport market 2021-2022



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Analysis of the European land transport market

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# KEY CONCLUSION

The project researched the European ground electric transport market, which was segmented by vehicle type and end-use sub-segment.

Conducted end-user research and identified sound values in each segment.

The segment of electric bicycles is the volume-forming among all types of European electric transport 75% of units (5,600 thousand).

Safety and self-expression are important for scooter and bicycle users, self-expression is important for scooter, bicycle and car users.

End users of mopeds and motorcycles do not see value in sound - they are confident in their safety, and self-expression through sound is not considered due to high speed and loud wind whistle. At the same time, these segments are the smallest in terms of units: 86 thousand for mopeds and 25 thousand for motorcycles.

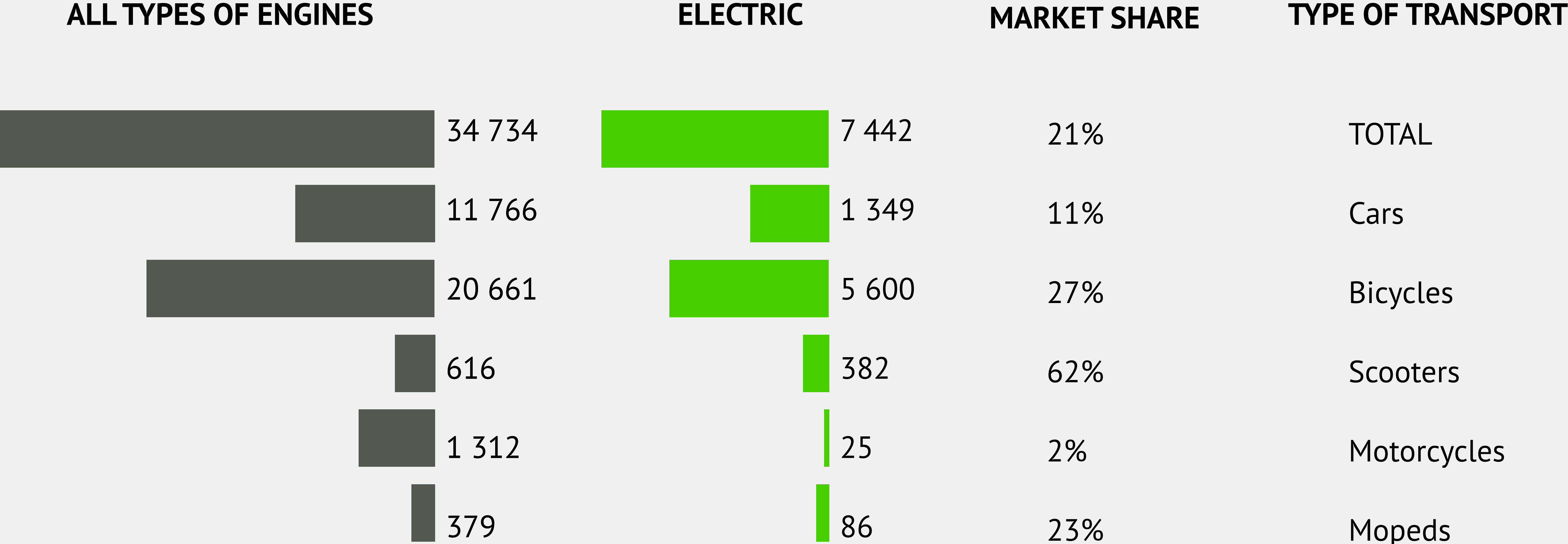
Safety and self-expression are important for the end users of scooters and bicycles, however, manufacturers and shares of both segments offer these options poorly, only scooter shares finalize the product with a sound device. As an alternative to the safety value, neon lights or a helmet-mounted speaker are used.

End users of electric cars are only interested in the value of self-expression: taxi and sharing services work with large brands and do not finalize the product.



# MARKET ANALYSIS

# The market for personal ground transportation in Europe is 35 million vehicles, 7 million (21%) of which are electric



000' pieces, demand per year

MARKET ANALYSIS

# MARKET TRENDS

In order to combat climate change and its negative effects, Europe has adopted a ban from 2035 on the sale of new cars with internal combustion engines

In 1973, the oil crisis pushed Europe towards the spread of cycling culture;  
In 2022, Europe's desire to limit the import of Russian oil may increase the pace of development of electric transport.

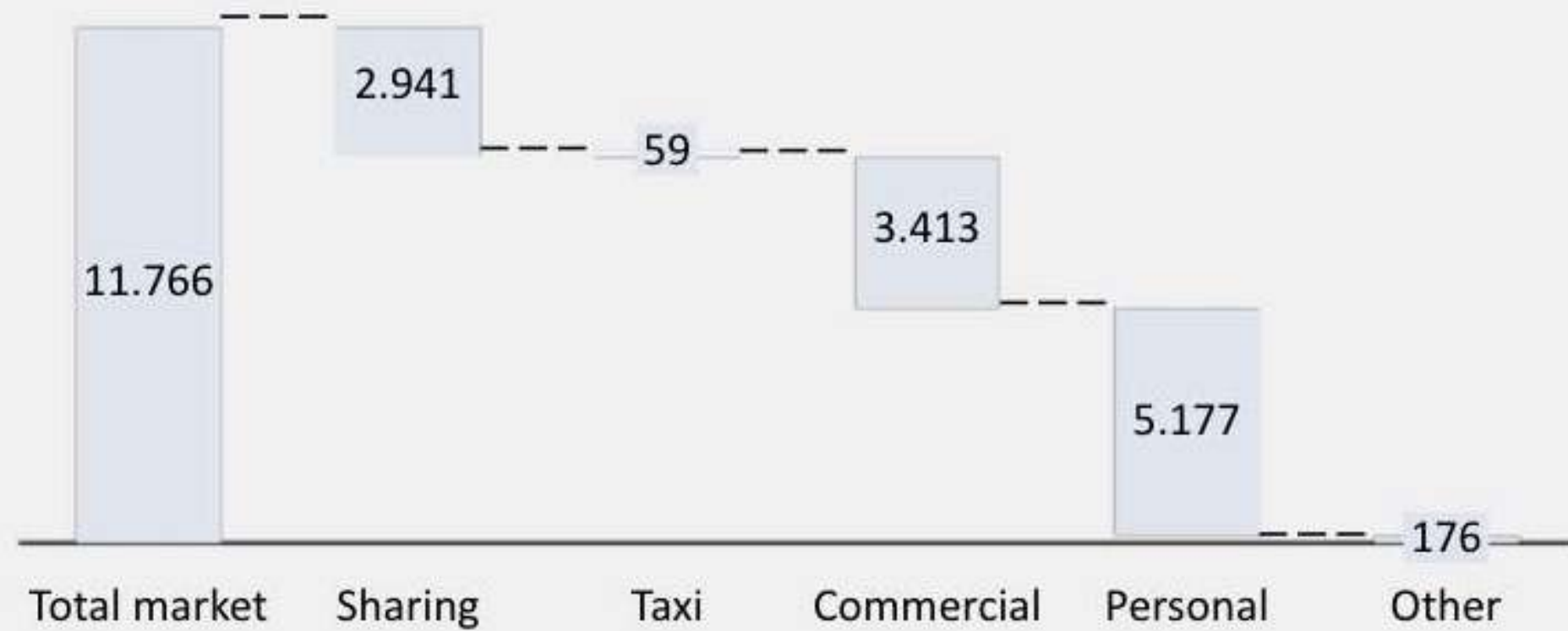
Electricity costs are lower than those for gas and oil.



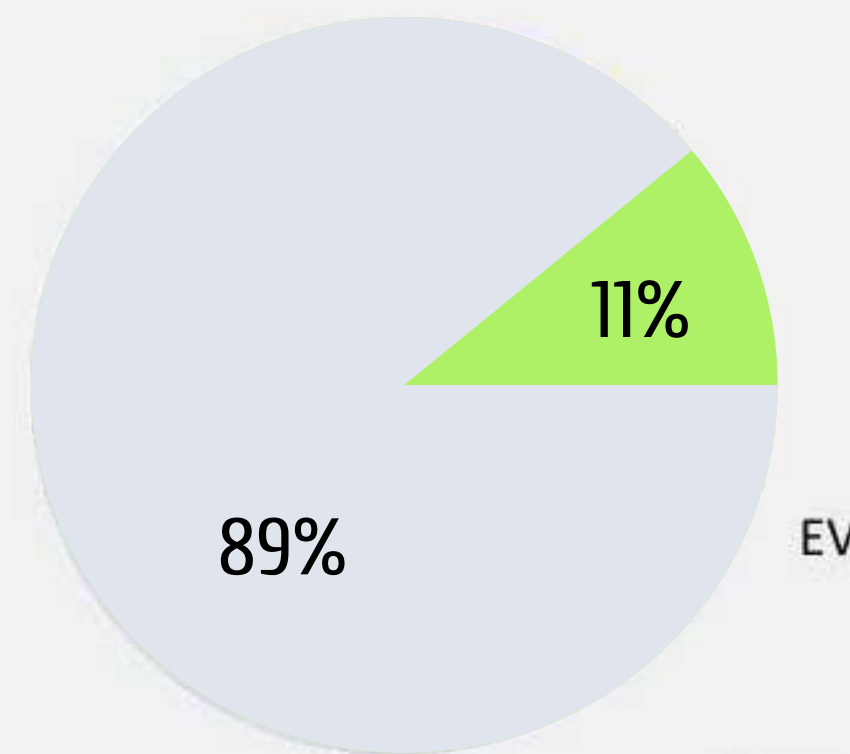
**Passenger cars:** In 2021 the share of EV is 11%. Norway, Sweden and Netherlands are countries with largest share, UK, Germany and Italy – with largest volume



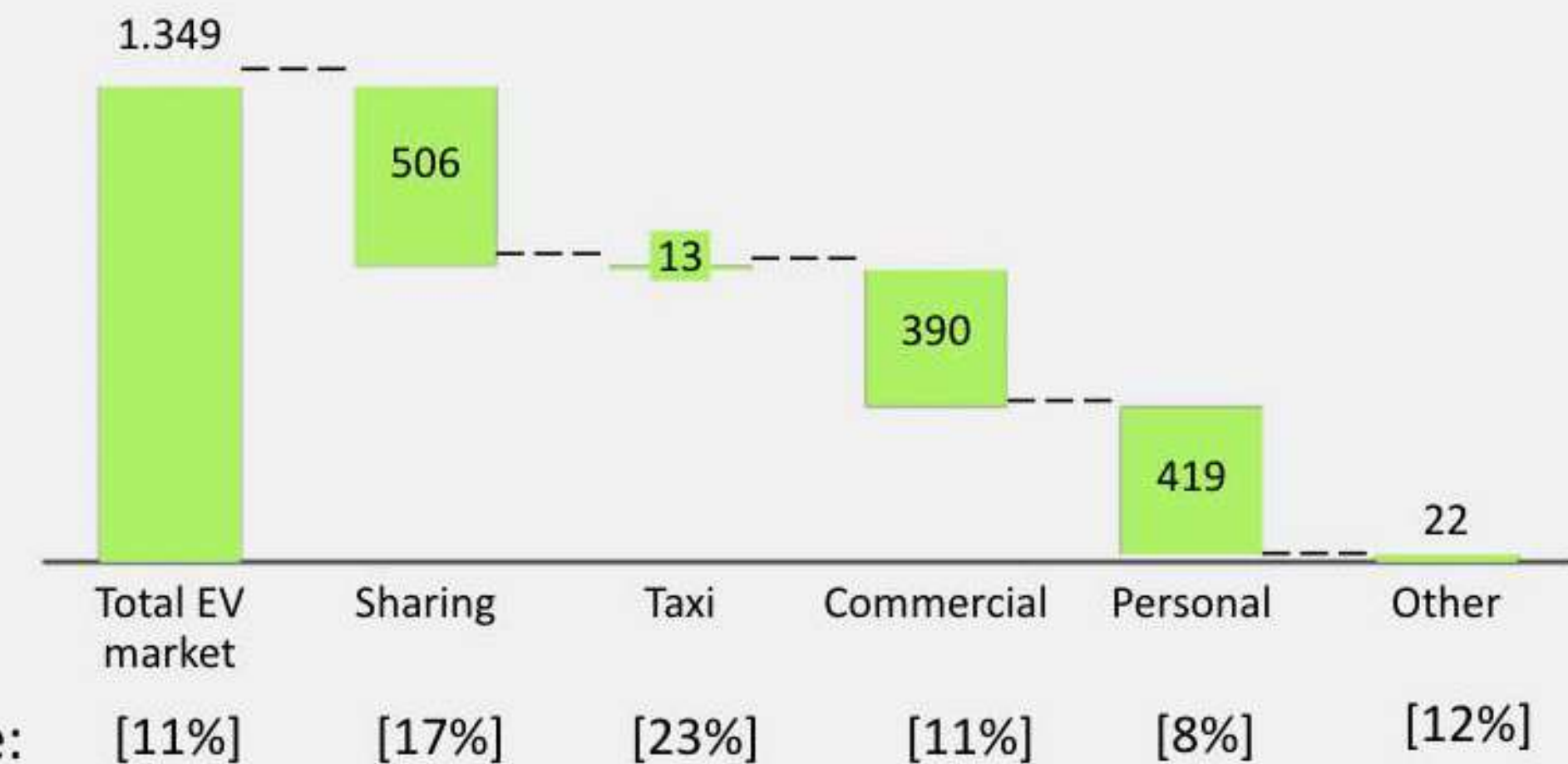
Passenger car by end-user segment, '000 units



EV share, %

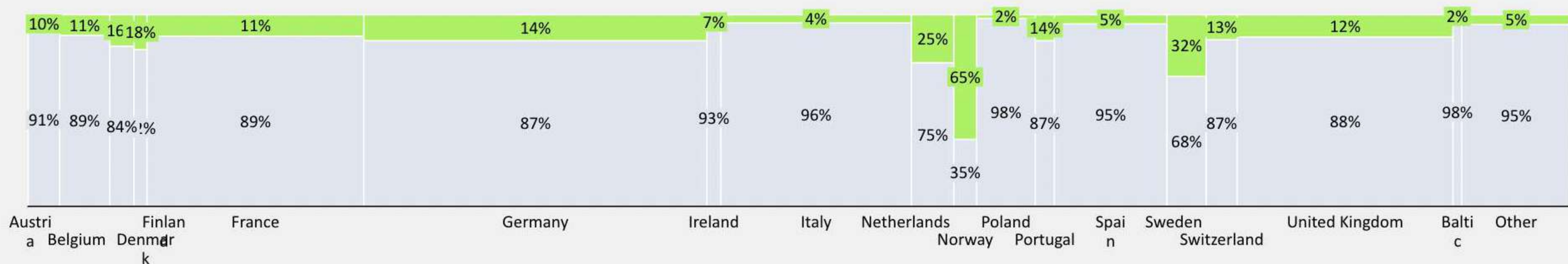


EV cars by end-user segment, '000 units



EV share: [11%] [17%] [23%] [11%] [8%] [12%]

EV share by countries, %

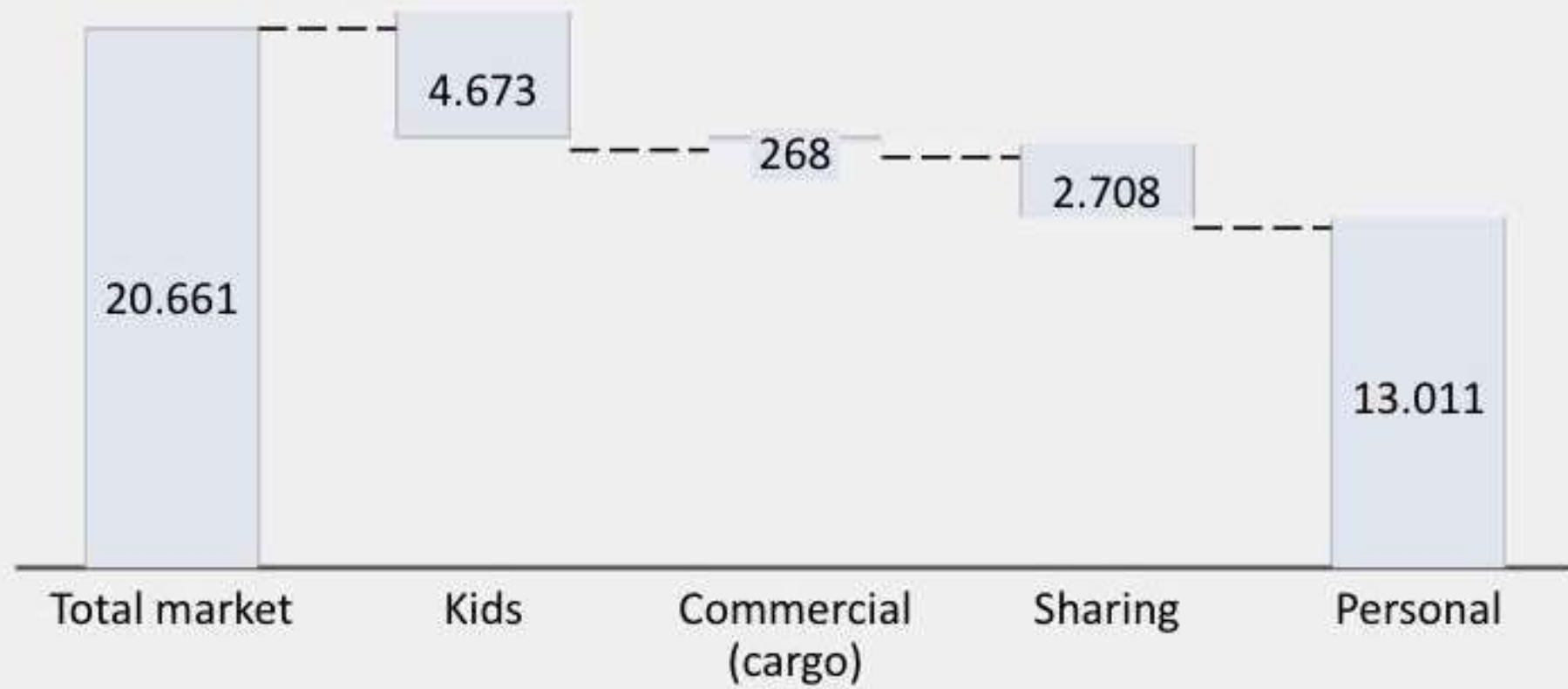


# Bicycles:

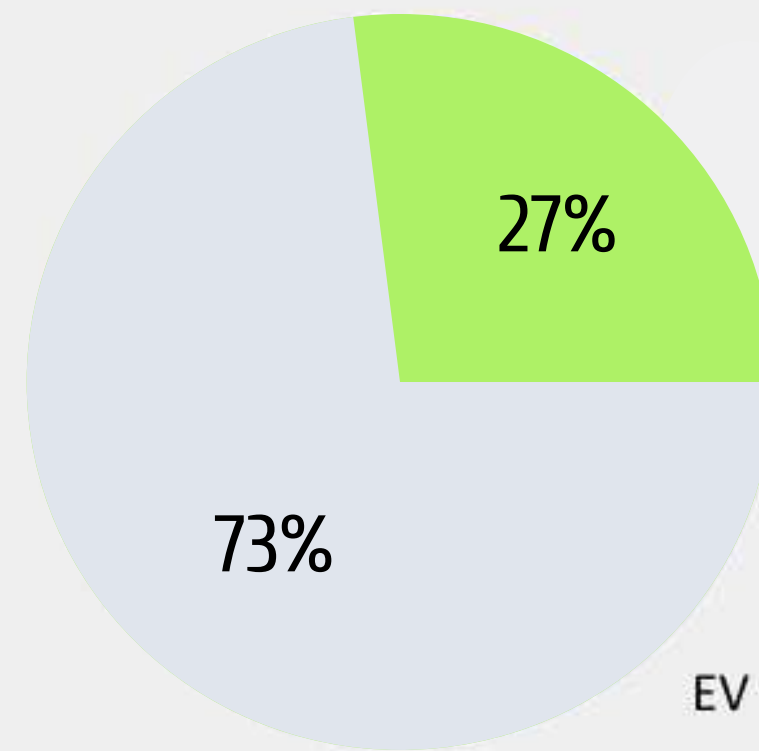
In 2021 the share of EV is 27%. Austria, Switzerland and Netherlands are countries with largest share, Germany is the country with largest volume



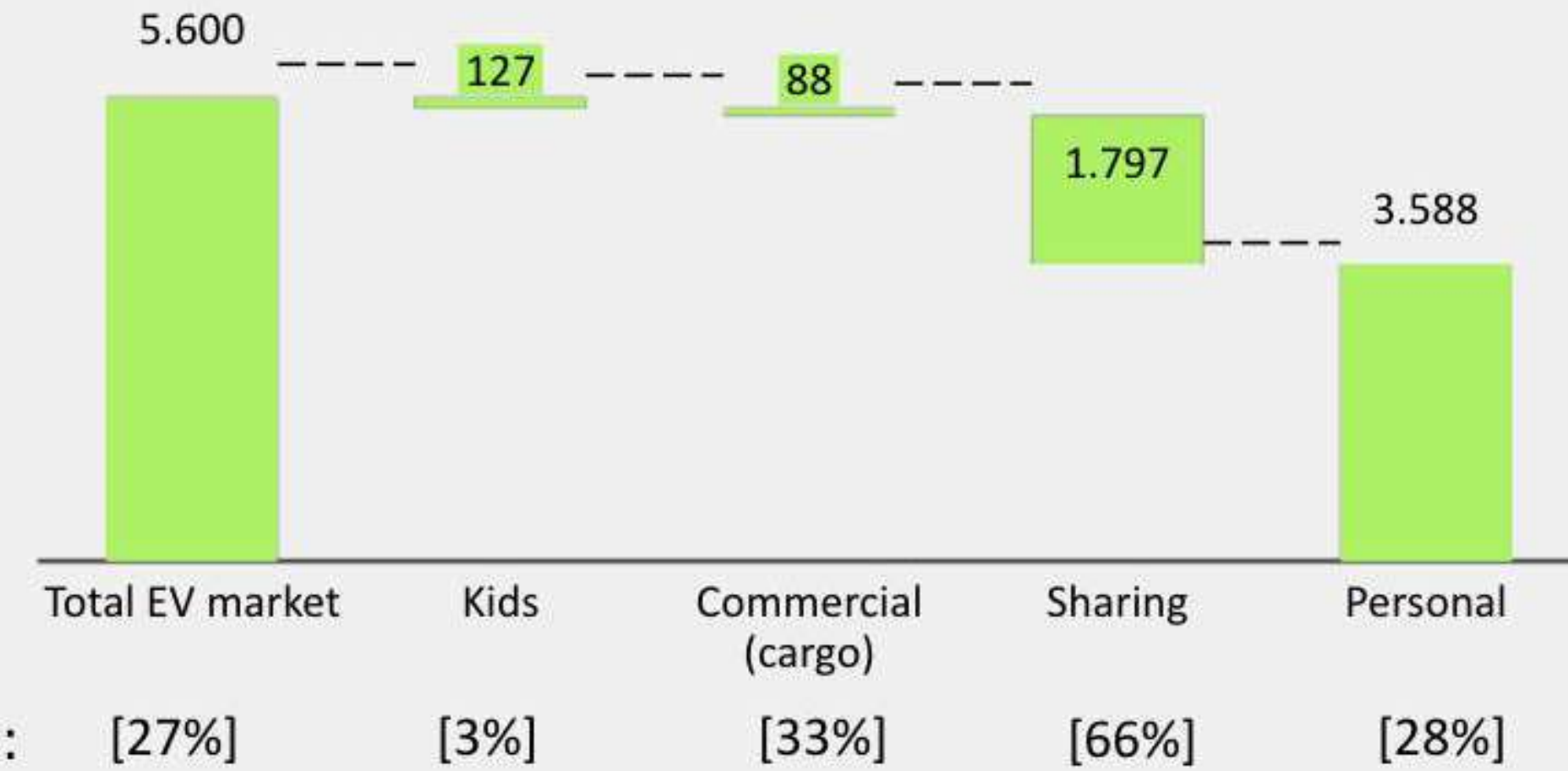
Bicycles by end-user segment, '000 units



EV share, %

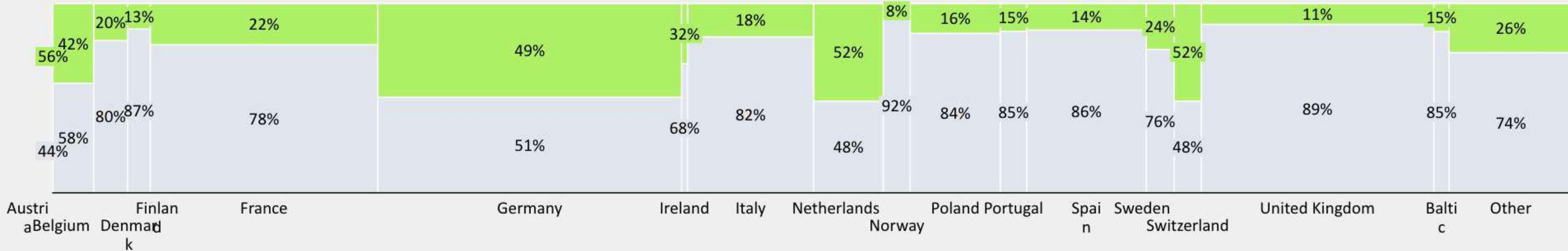


EV bicycles by end-user segment, '000 units



EV share: [27%] Kids [3%] Commercial [33%] Sharing [66%] Personal [28%]

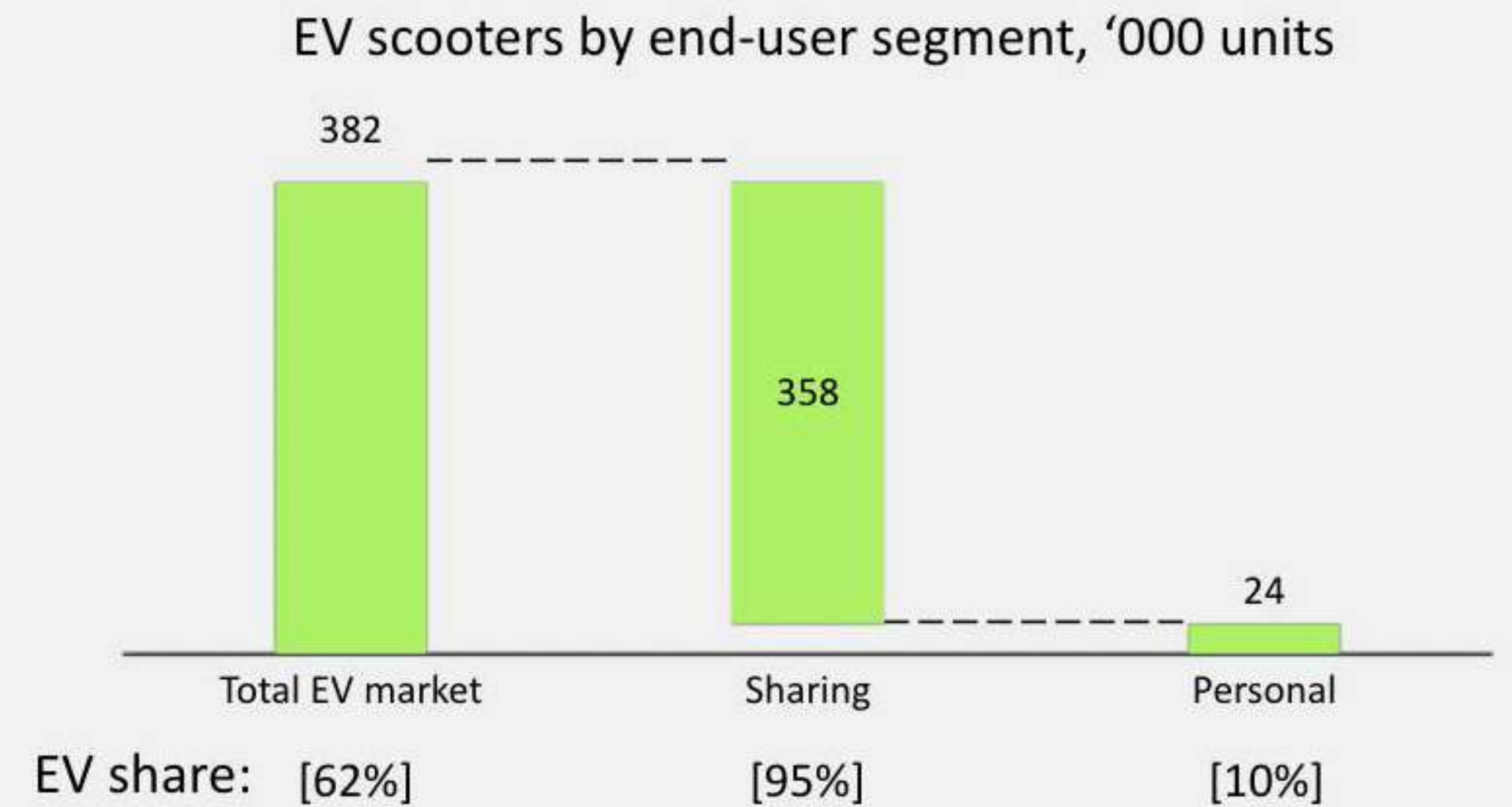
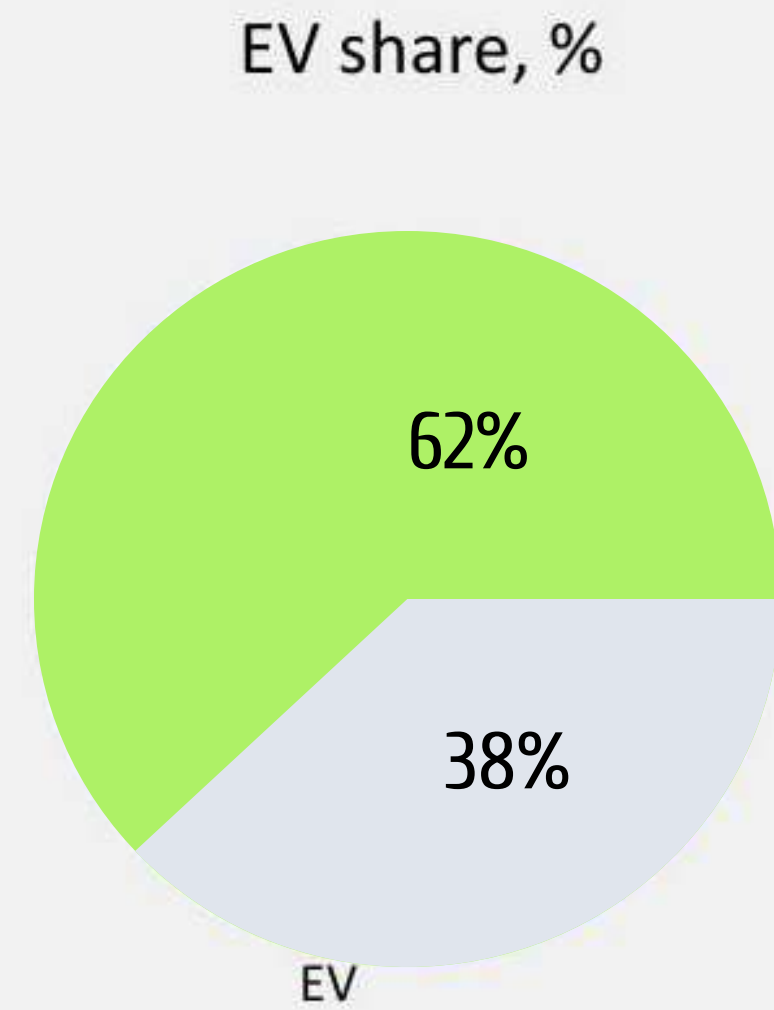
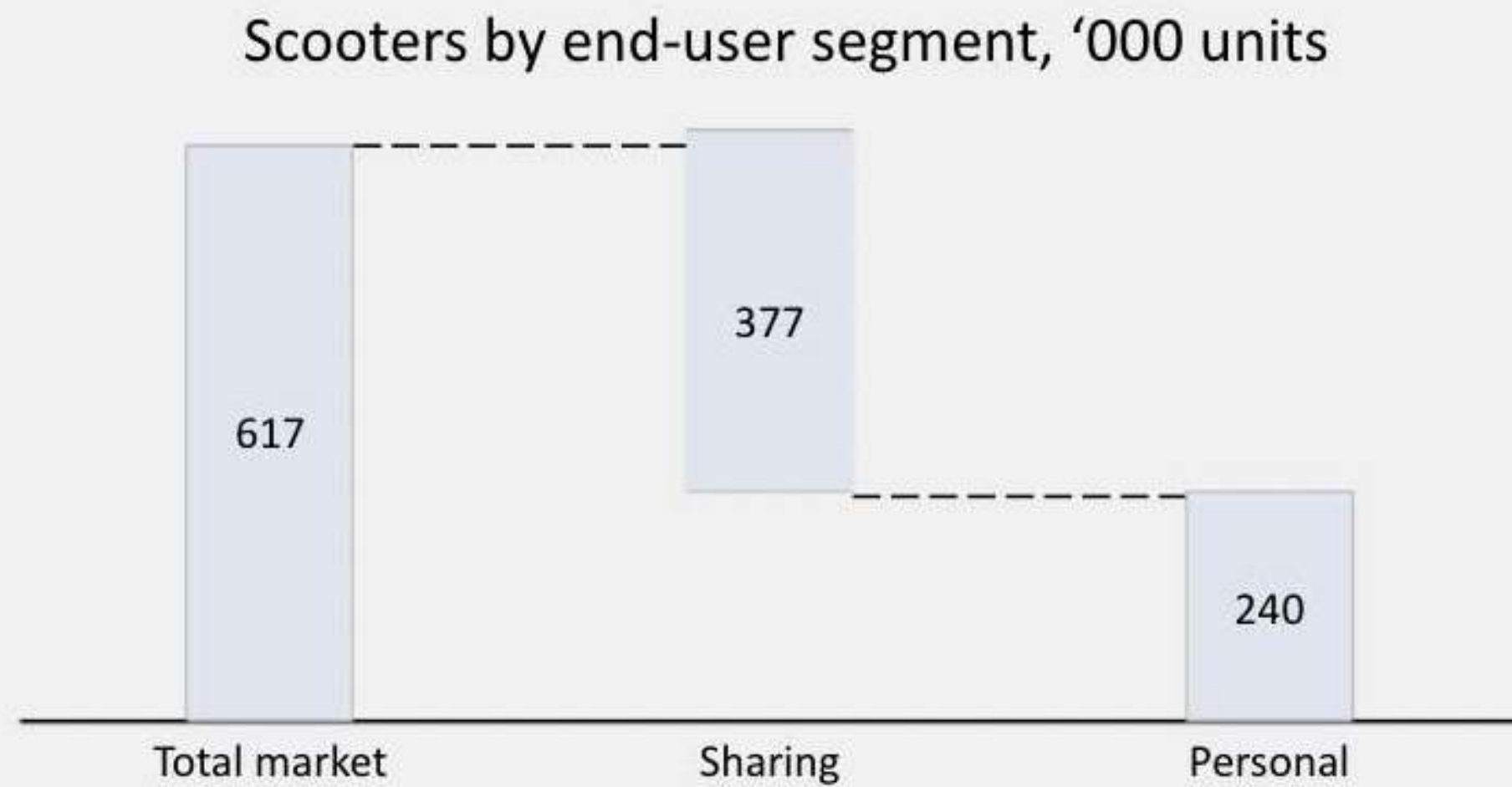
EV share by countries, %



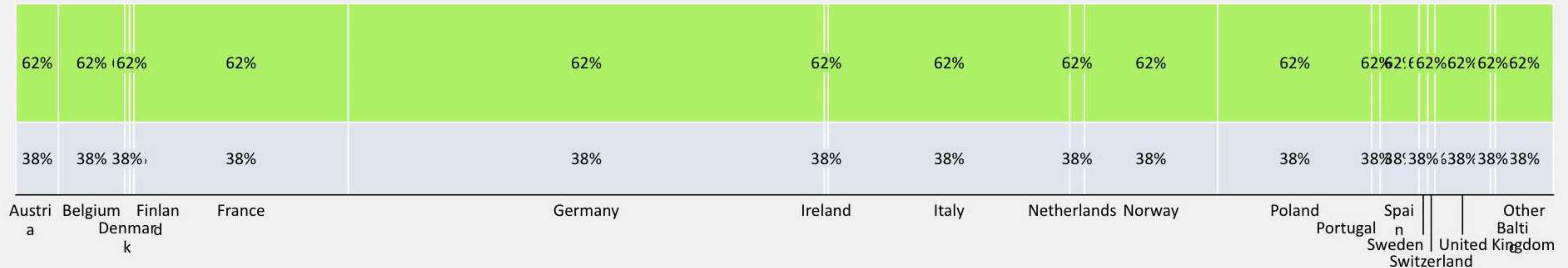


# Scooters:

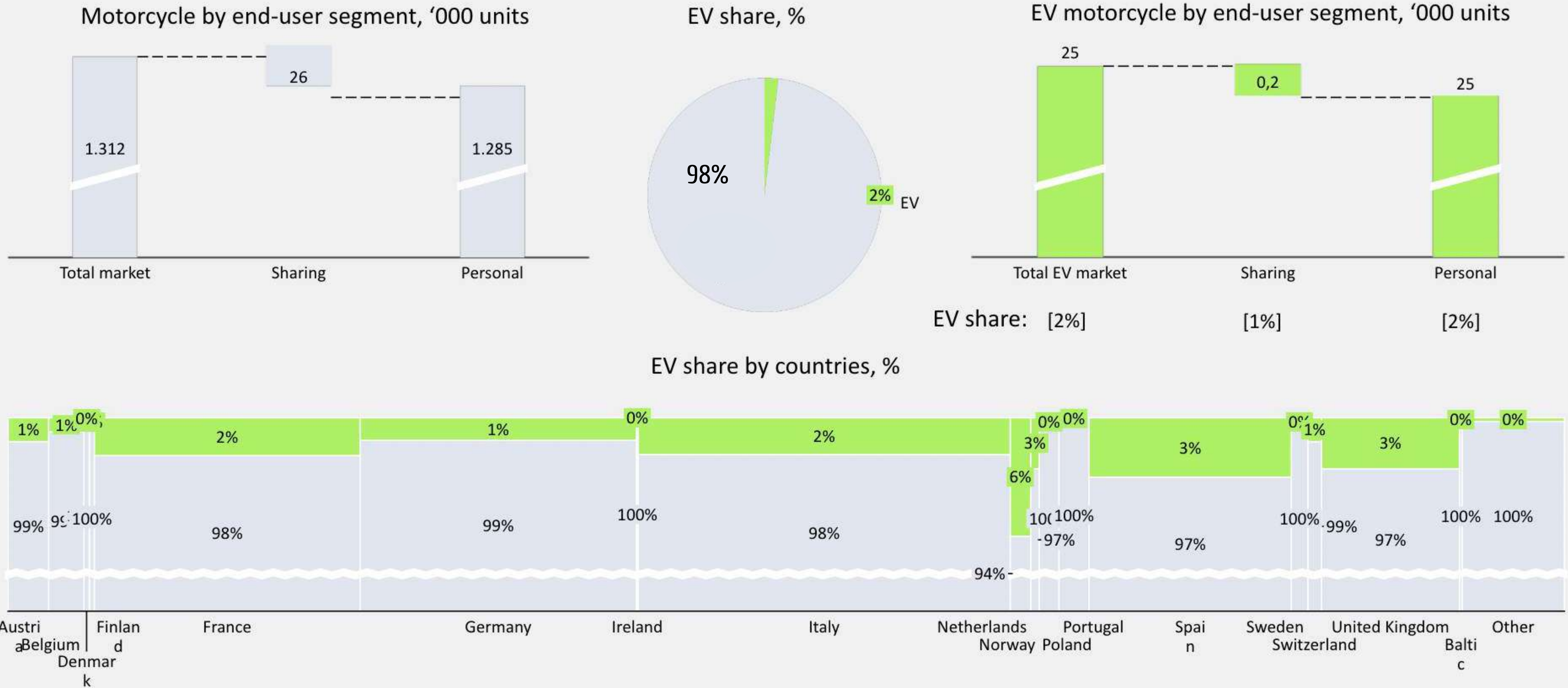
In 2021 the share of EV is 62%. The sharing end-user segment is 95% EV, Germany, Italy and France is the countries with largest volume



EV share by countries, %

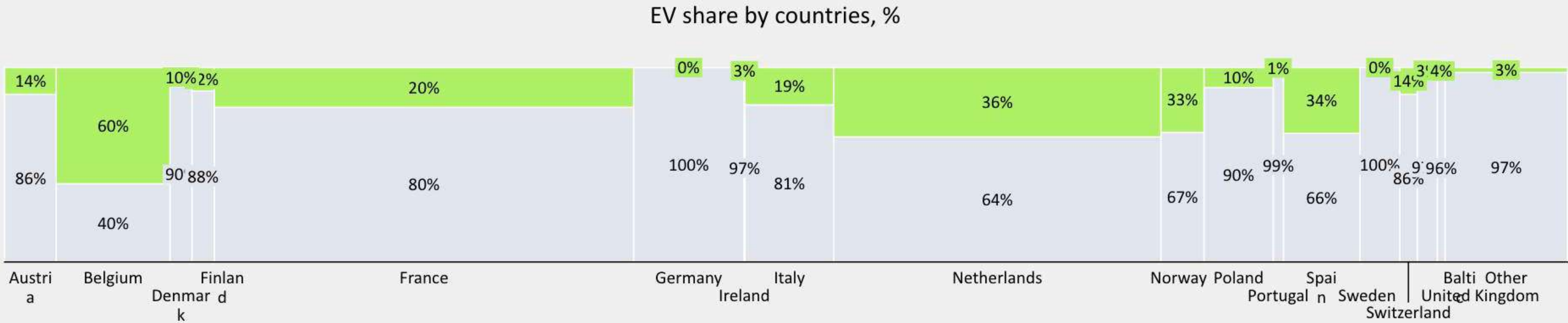
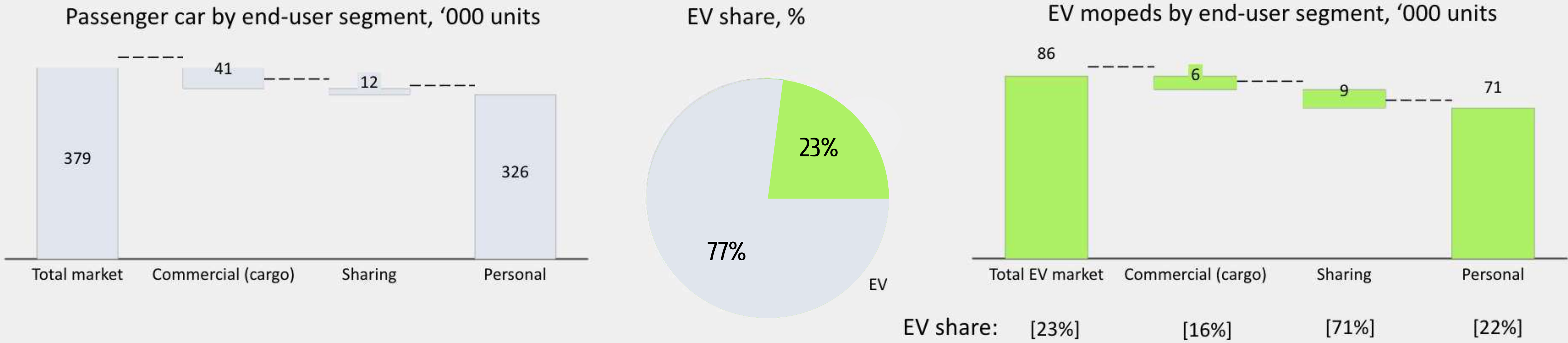


# Motorcycles: In 2021 the share of EV is only 2%. Netherlands is the country with largest share, Spain, UK, Italy and France – with the largest volume





**Mopeds:** In 2021 the share of EV is 23%. Belgium, Netherlands and Spain are countries with largest share, France is also with largest volume





# VALUE PROPOSAL



The next step of the project was the formation of value hypotheses for all segments and the formation of a questionnaire for end users to validate hypotheses of the value of sound in electric vehicles.

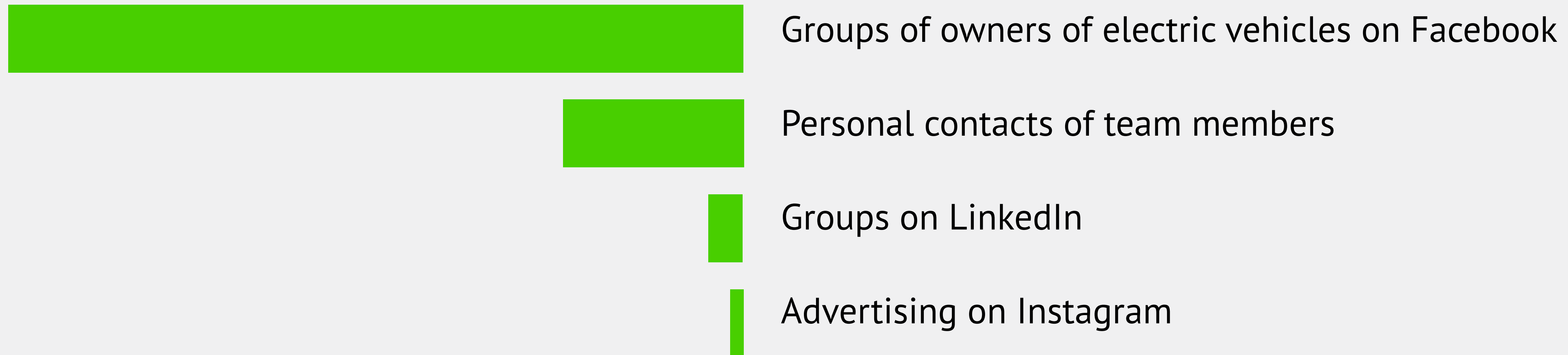
As a result, responses were received from the end users of the European market, from which portraits of users of electric cars, bicycles, scooters and pedestrians were compiled.

To form portraits of users of motorcycles and mopeds, a sufficient number of responses were not received due to the small size and inaccessibility of the segment

# According to the study, the largest number of target audience responses received from Facebook

End user questionnaire for 5 segments was compiled in Typeform.com

The largest channel with the received answers was **Facebook groups**



number of responses per channel

# Formation of value hypotheses for target segments

Nº	Segment under study	Value hypotheses								Fears of pedestrians	How Thor Avas could solve the problems
		Want to feel more secure	Need non-verbal communication	The function of scaring away animals is important	It is important to have emergency/call for help signals	The importance of self-expression	The importance of light weight	Feeling the lack of mechanical sounds	There is a lack of security		
1	Electric scooter sharing segment	★	★	★	★	★				Inexperienced drivers, drive at high speed on pedestrian areas	<ul style="list-style-type: none"> <li>• Help to become more noticeable</li> <li>• Develop a language of audio communication with pedestrians and other road users</li> <li>• Implement a sound that scares away animals</li> <li>• The alarm clock will become more pleasant to hear</li> <li>• Fall identification function implementation</li> <li>• Large library of sounds</li> </ul>
2	Electric bicycle sharing segment	★	★	★	★	★					
3	Electric bicycle owner segment	★	★	★	★	★	★				
4	Electric car sharing segment		★			★		★	★	Invisible and inaudible in spaces with small visibility (parking lots)	
5	Electric car owner segment		★			★		★	★		
6	Electric motorcycle owner segment	★	★			★		★	★	Too loud, fast and dangerous	
7	Electric moped owner segment		★	★		★			★	Loud and annoying, sometimes drive at pedestrian areas	

★ Already exists in the THOR AVAS    ★ Don't yet exists in the THOR AVAS



According to the results of the questionnaire, pedestrians feel danger from electric vehicles. They consider drivers of scooters and mopeds the least competent, motorcycles and cars the most competent.

### User portrait

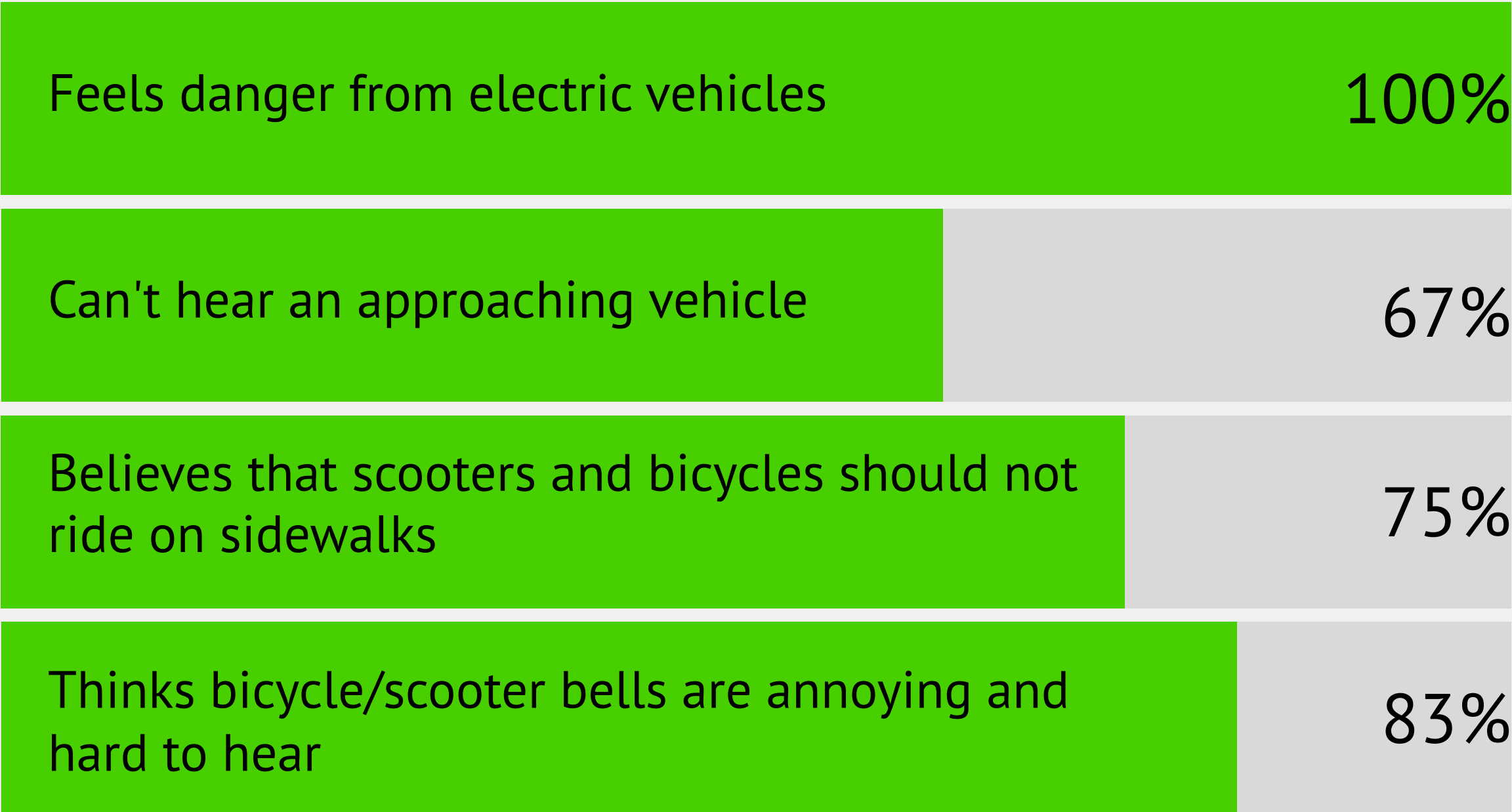
All pedestrians in our study feel danger from electric vehicles. They call drivers of scooters and mopeds the least qualified drivers, motorists and motorcyclists - the most qualified.



The opinion of pedestrians about drivers:

	Least qualified	Most qualified
Sooter	83%	0%
Bike	67%	17%
Car	0%	50%
Motorcycle	17%	50%
Moped	83%	0%

### Sound value hypotheses





Drivers of electric cars believe that they are sufficiently protected, and the introduction of sound can be interesting from the side of self-expression.

## User portrait

Prefers an electric car over a conventional one due to the environmental agenda, quietness while driving and lower electricity costs compared to gas and gasoline

48 year  
old  
European



## Sound value hypotheses

Want to be more secure	22%
Need non-verbal communication with pedestrians	30%
Misses the mechanical sounds of the engine	6%
The importance of self-expression	53%

VALUE PROPOSAL

# Cyclists affirm the value of safety and self-expression, noting that they want to be more visible to pedestrians and car drivers

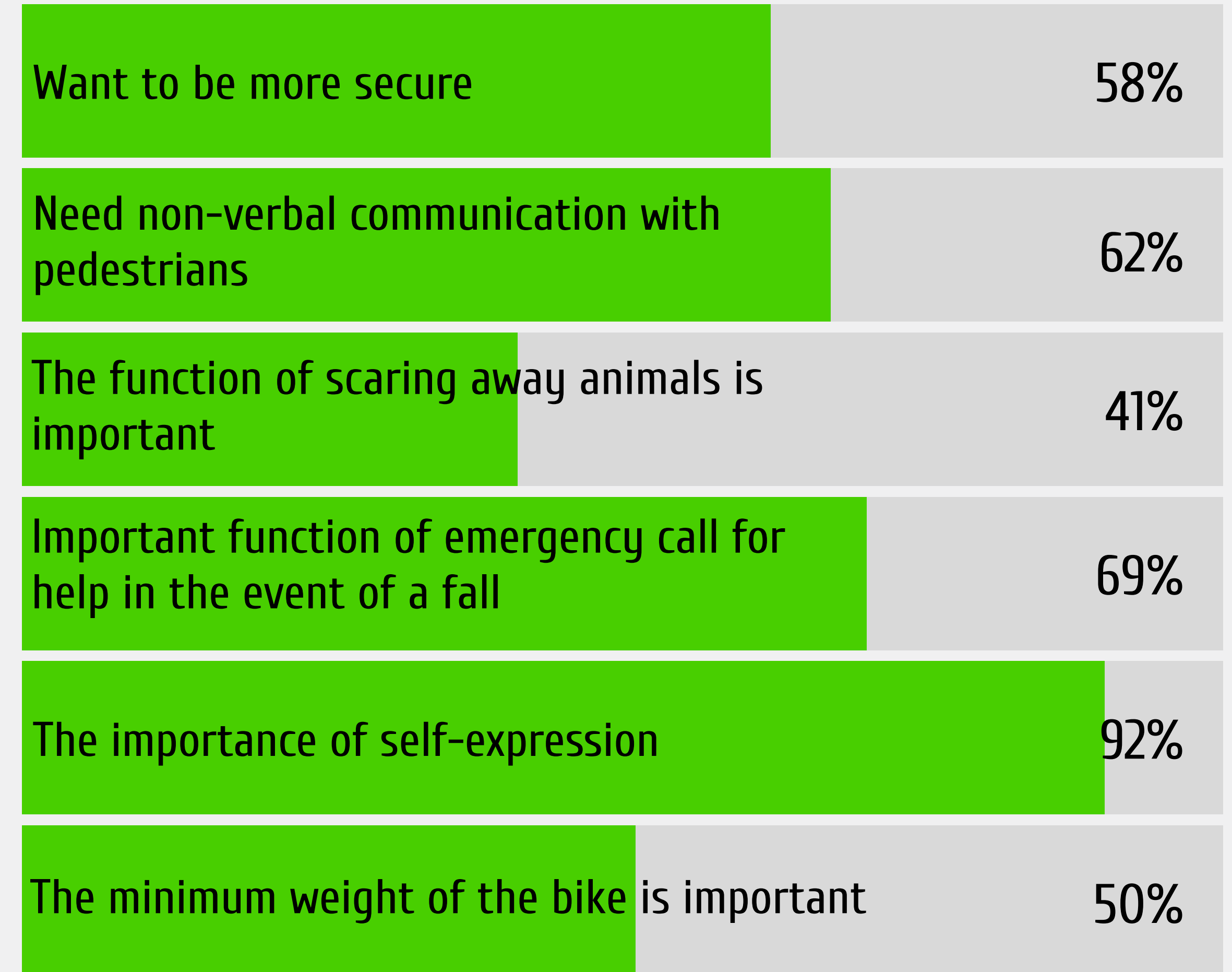
## User portrait

Prefers e-bike for comfortable uphill riding

Cyclists confirmed the value hypotheses of sound in e-bikes, especially highlighting the need to be more visible to pedestrians and car drivers.



## Sound value hypotheses



# Electric scooter drivers confirm the value of sound, especially in cases of communication with pedestrians and the safety of their health

## User portrait

Values:

- Self-expression and freedom of movement
- Preservation of the environment
- Traffic jam bypass

Electric scooter end users recognize the value of sound in vehicles, especially in cases where verbal communication is delegated to beeps and in extreme cases of health hazards



## Sound value hypotheses





# CUSTOMER JOURNEY MAP

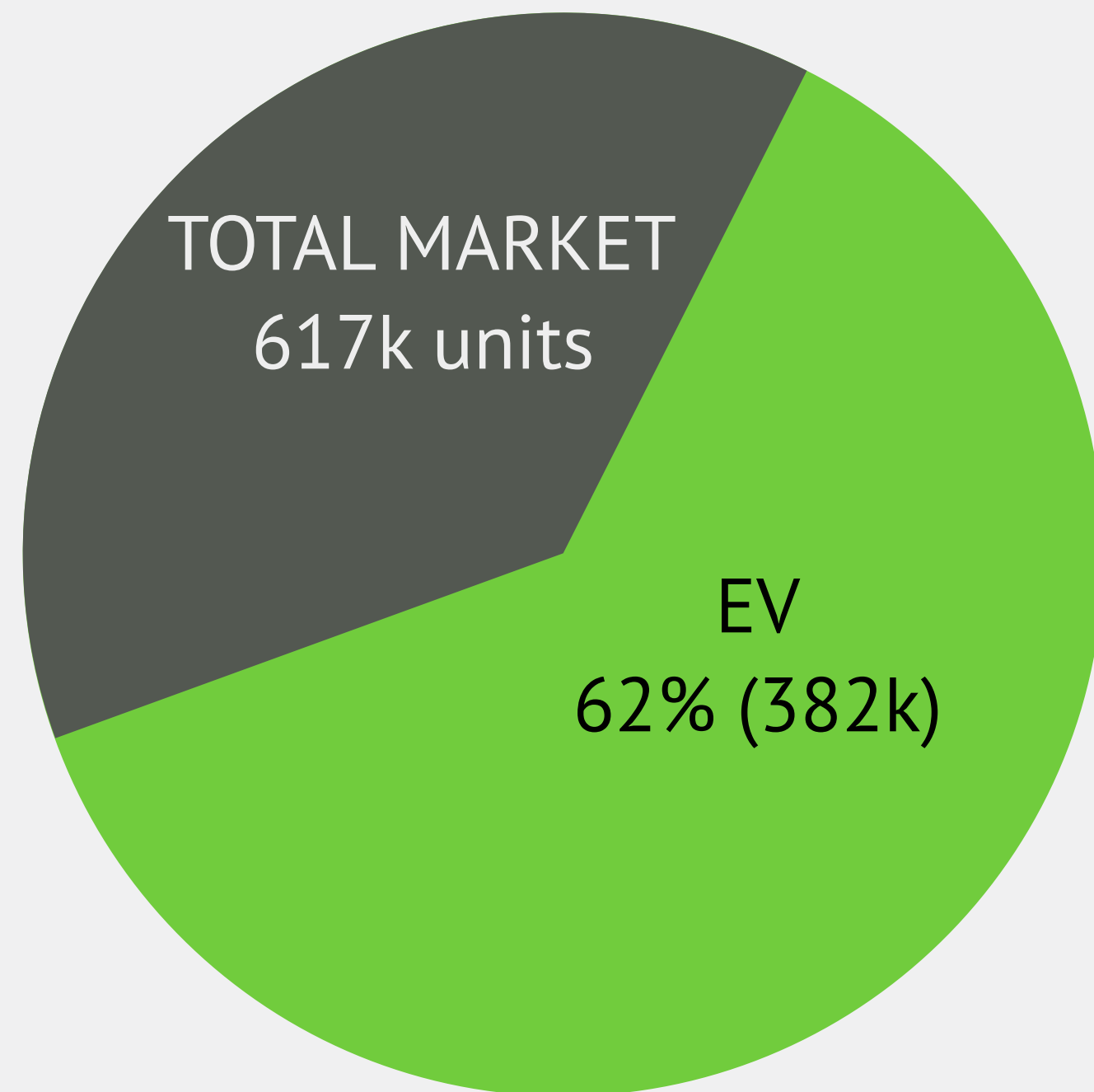




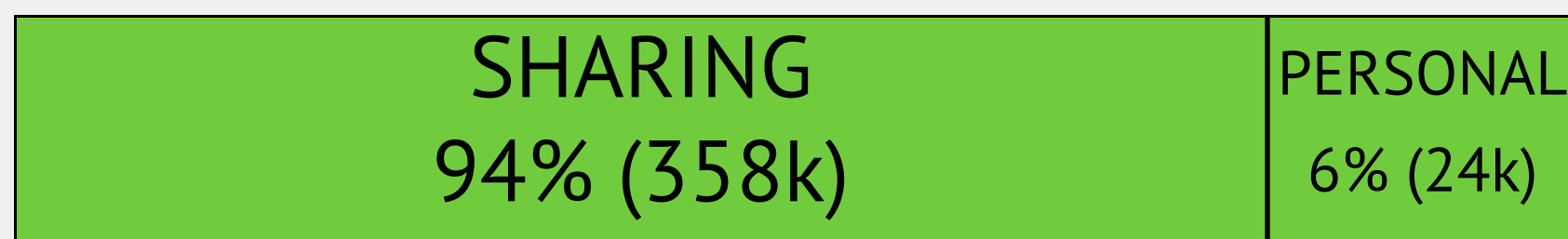
The final step was a dialogue with the businesses of nine selected segments. It was possible to establish contact with a selection of companies in 9 segments through customer support

# SCOOTER: There is a value gap between customer expectations and products offered by sharing services and manufactures that can be filled with THOR AVAS

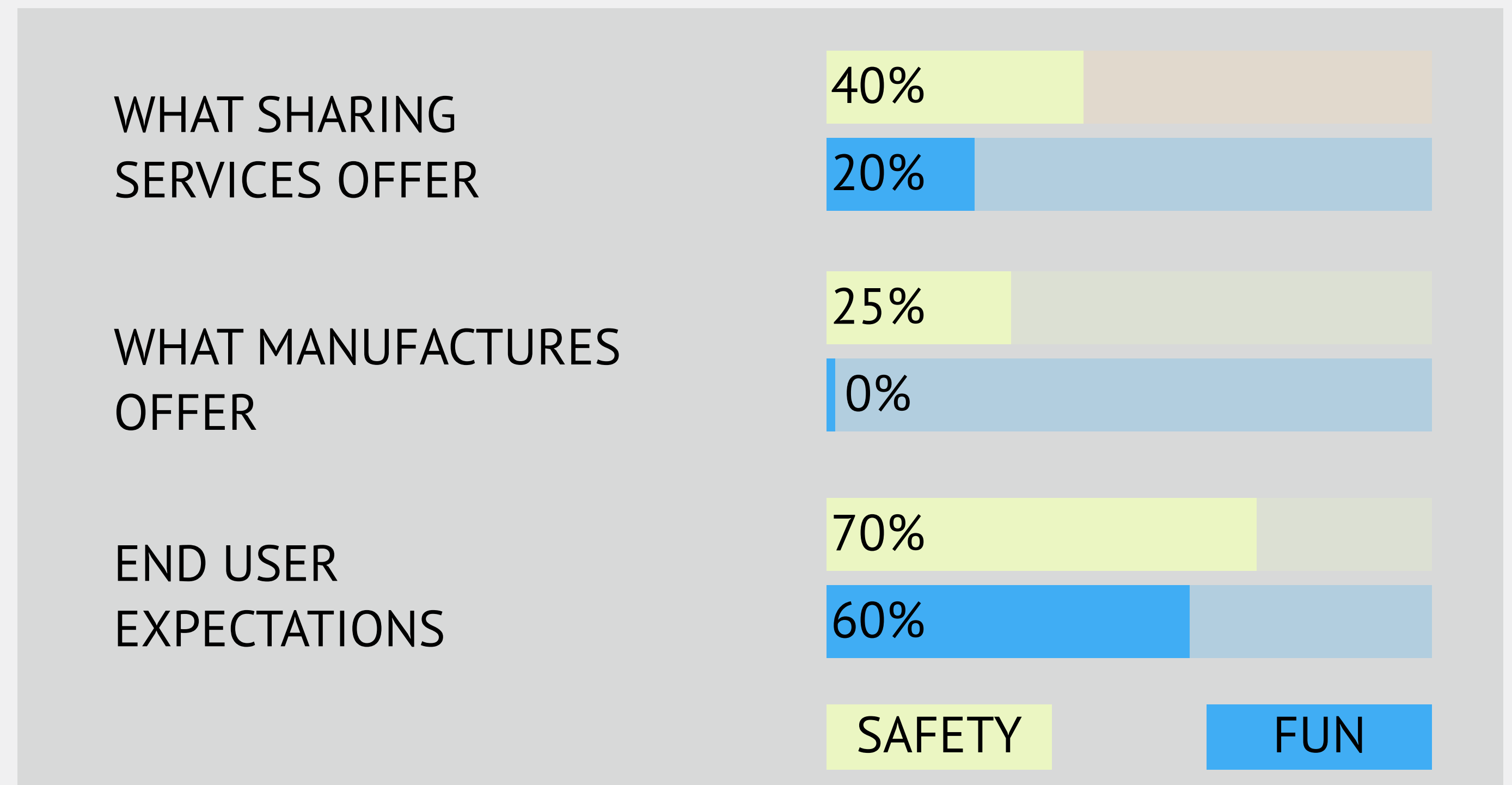
EUROPE SCOOTER MARKET



SCOOTER EV MARKET DIVIDED BY SEGMENTS



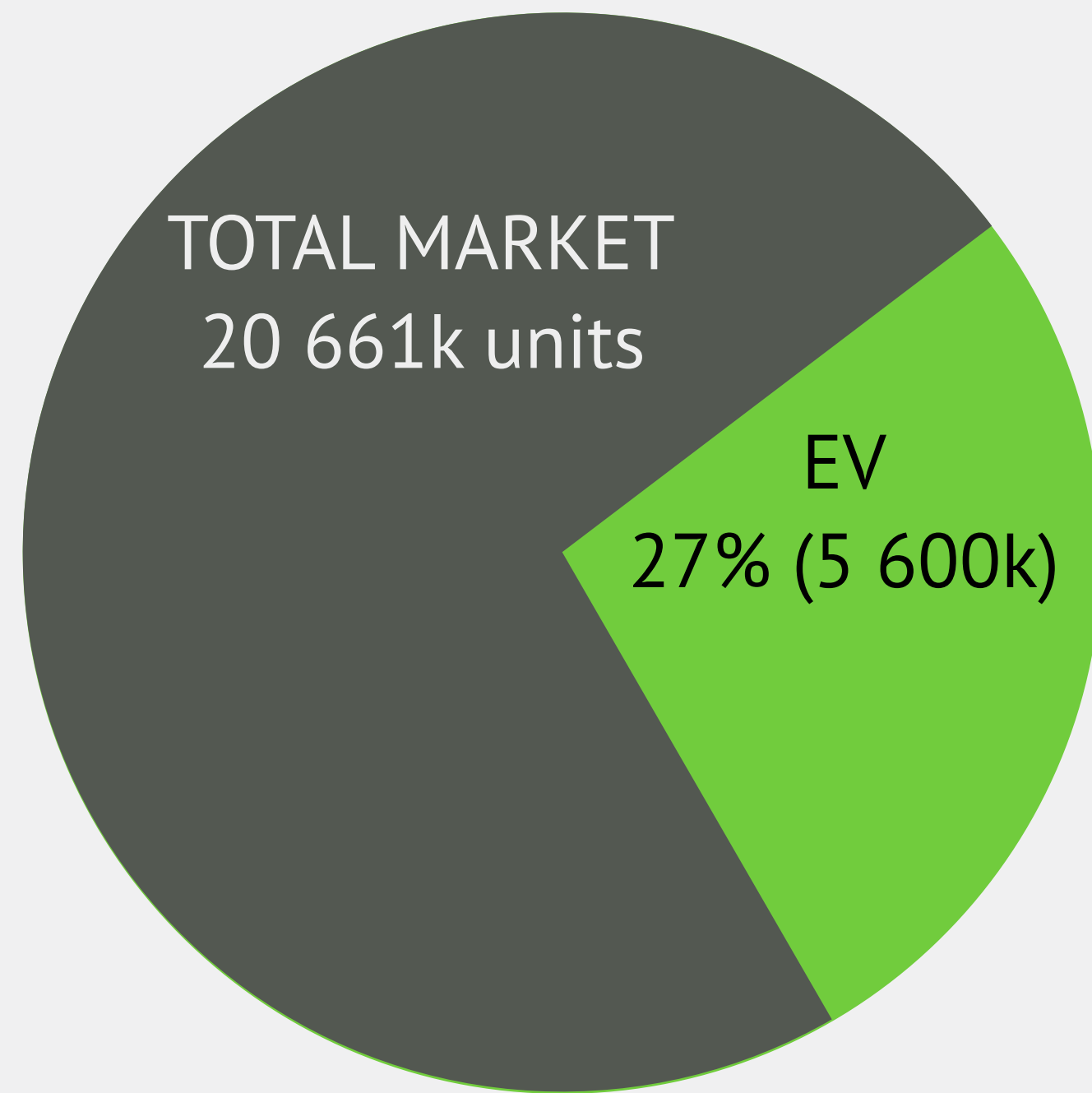
VALUES IDENTIFIED THROUGH THE END USER QUESTIONNAIRE AND DIALOGUE WITH BUSINESSES



Sharing service (Lime and Bolt) keep you safety and fun with the in-built speaker  
 Manufacturer Hiboy uses neon light to prevent traffic accidents

**BICYCLE:** There is a value gap between customer expectations and products offered by sharing services and manufactures that can be filled with THOR AVAS

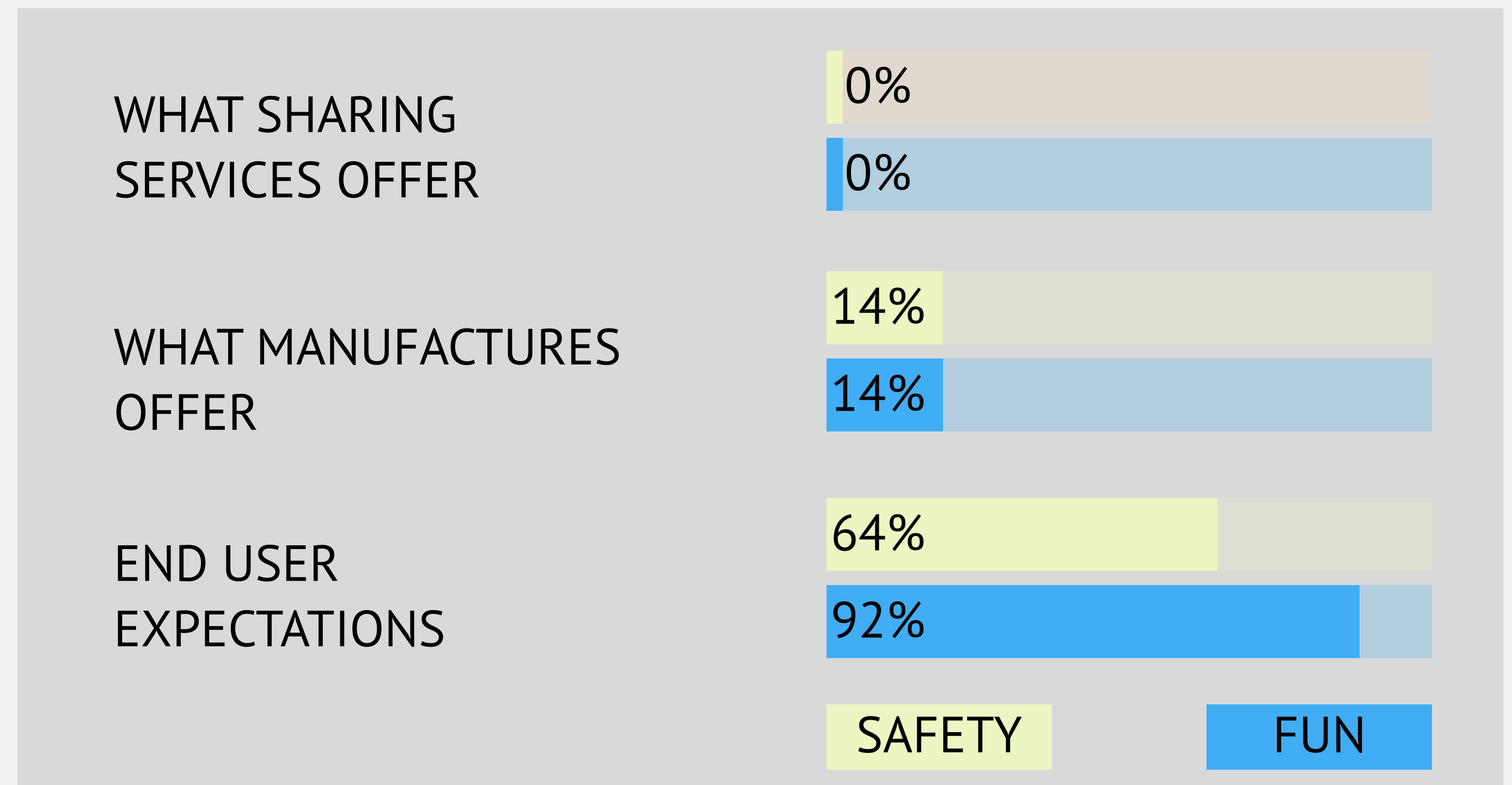
**EUROPE BICYCLE MARKET**



**BICYCLE EV MARKET DIVIDED BY SEGMENTS**

<b>SHARING</b>	<b>PERSONAL</b>	<b>OTHER</b>
32% (1 797k)	64% (3 588k)	4%

**VALUES IDENTIFIED THROUGH THE END USER QUESTIONNAIRE AND DIALOGUE WITH BUSINESSES**

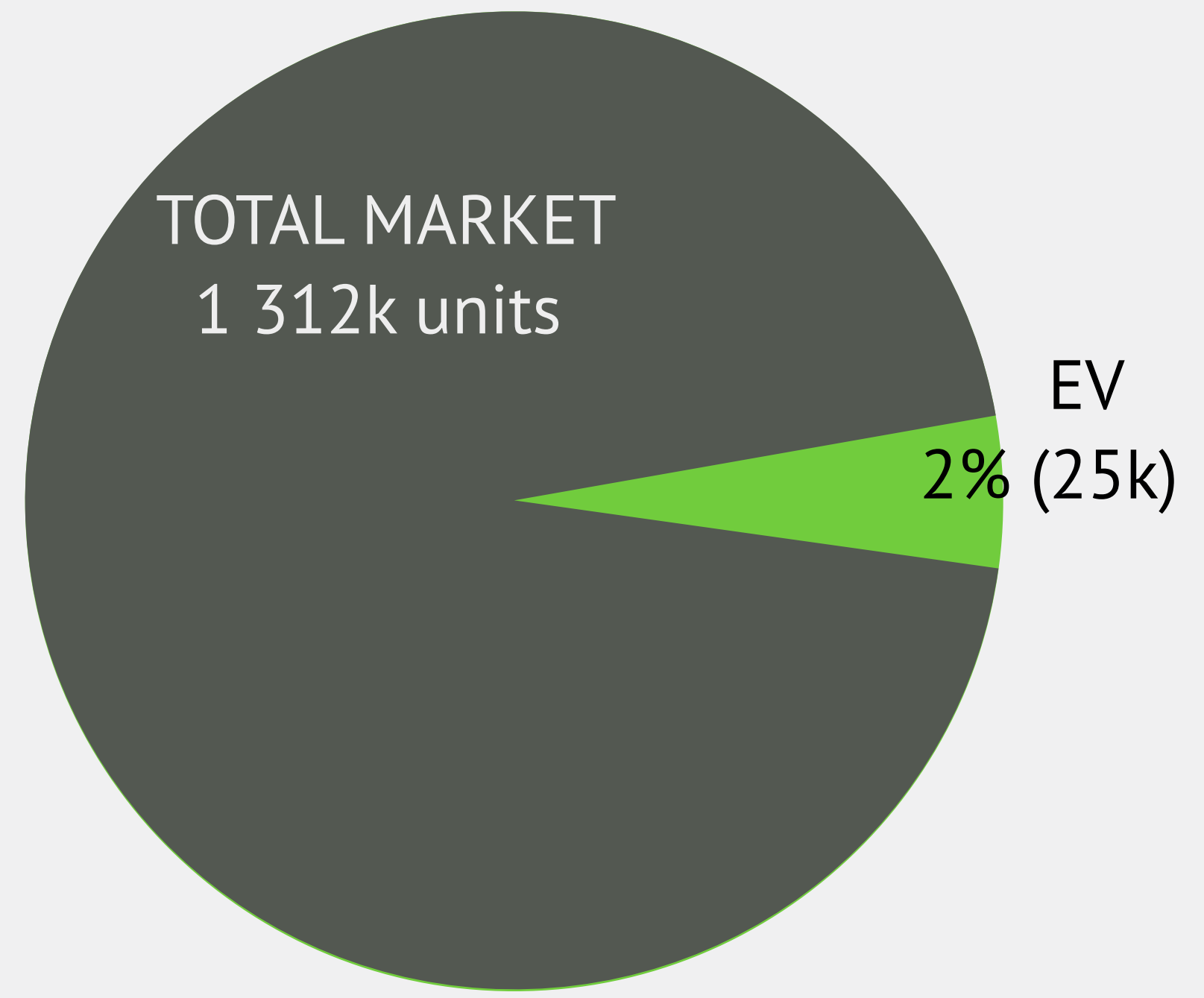


Blinkee sharing service offers helmet with in-built speakers

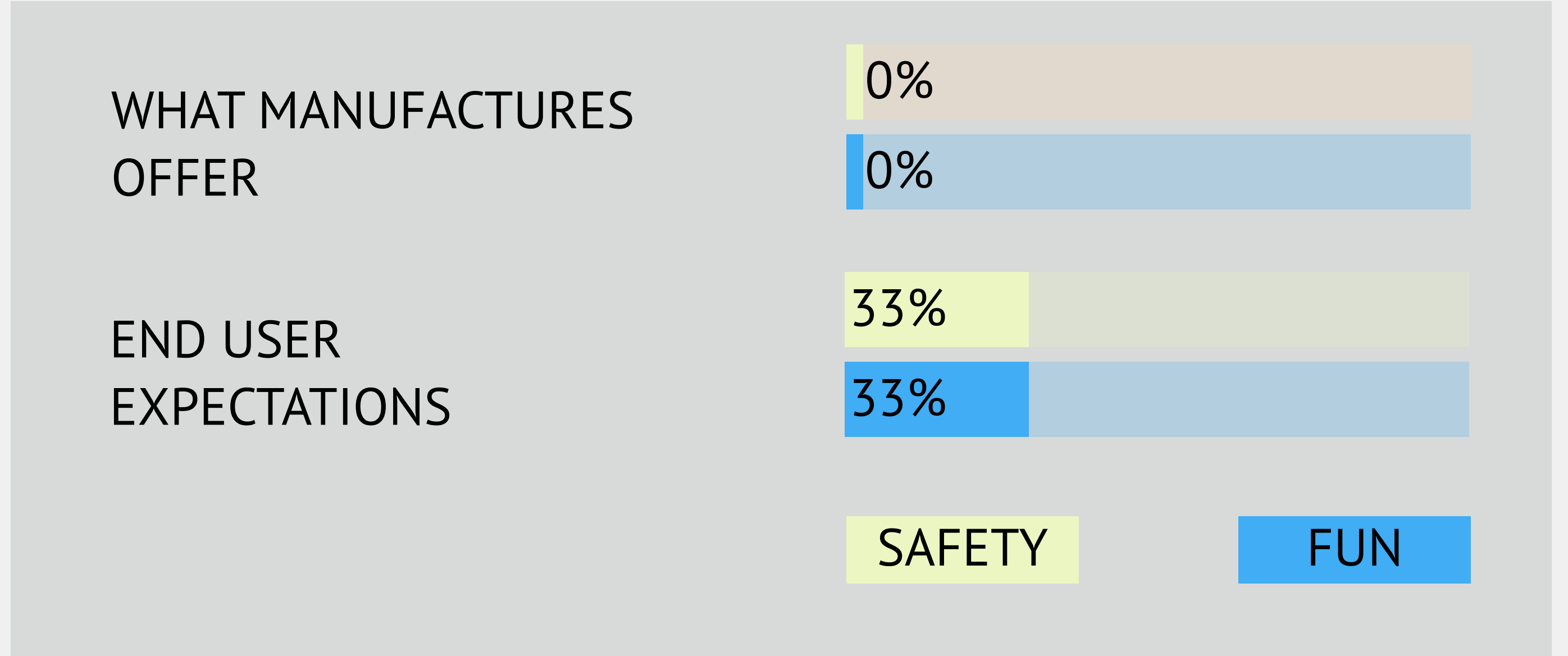
Manufacturer Noordung offers futuristic boomboxes

**MOTORCYCLE: Poor features match low customer expectation.**  
**Neither business nor end users no dot need it now**

EUROPE MOTORCYCLE MARKET

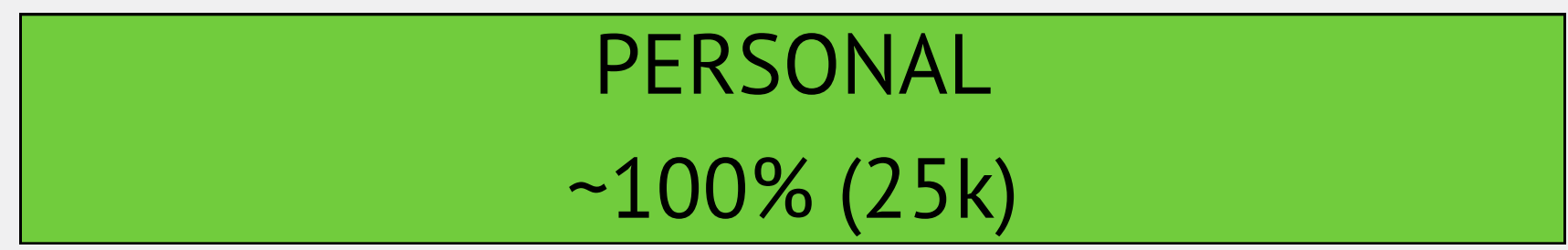


VALUES IDENTIFIED THROUGH THE END USER QUESTIONNAIRE AND DIALOGUE WITH BUSINESSES



Users feel safe  
 Pedestrians think motorcycle riders are the most skilled road users

MOTORCYCLE EV MARKET DIVIDED BY SEGMENTS



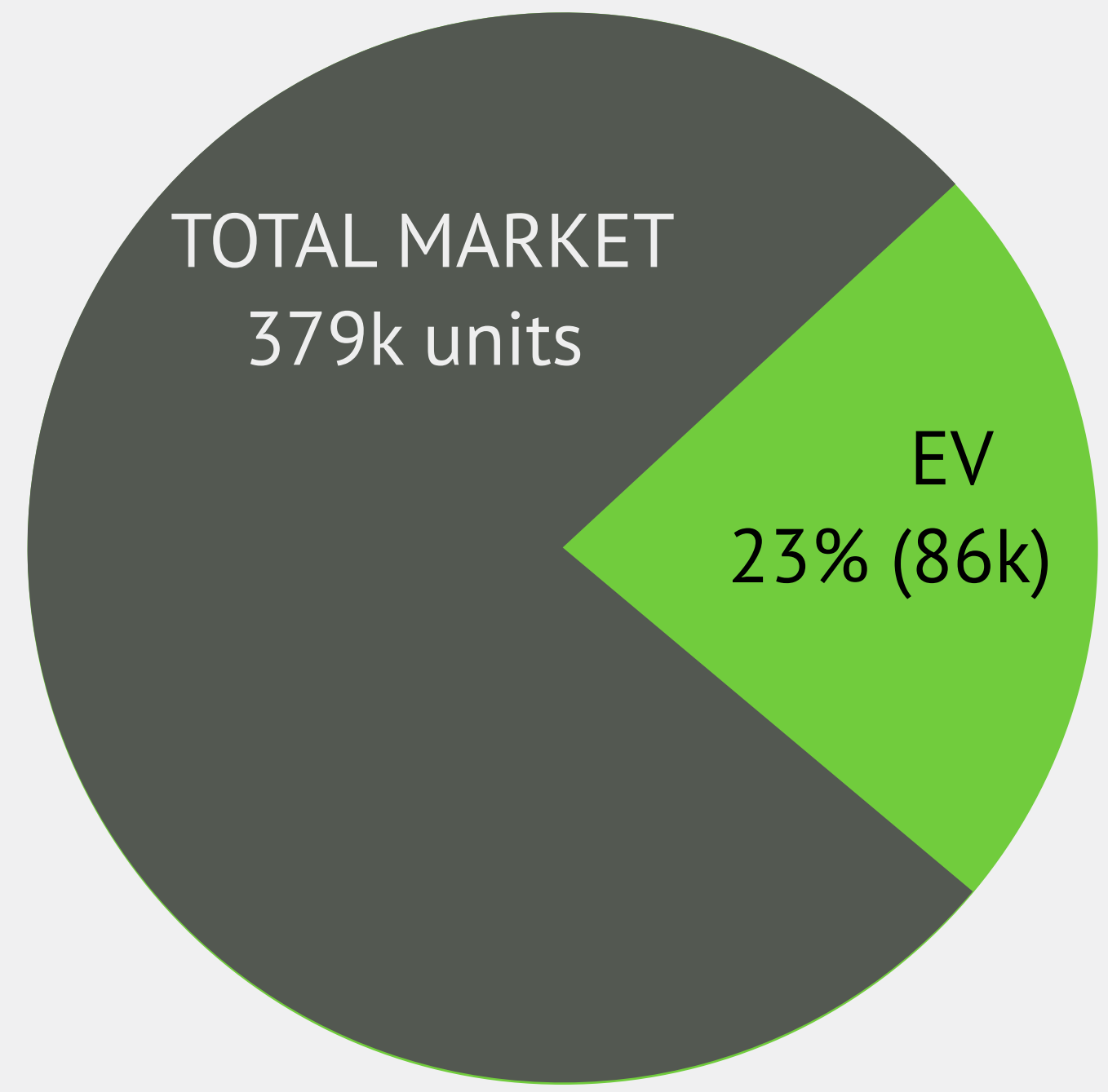
MARKET POSITIONING



**MOPED: Poor features match low customer expectation.**

**Neither business nor end users no dot need it now**

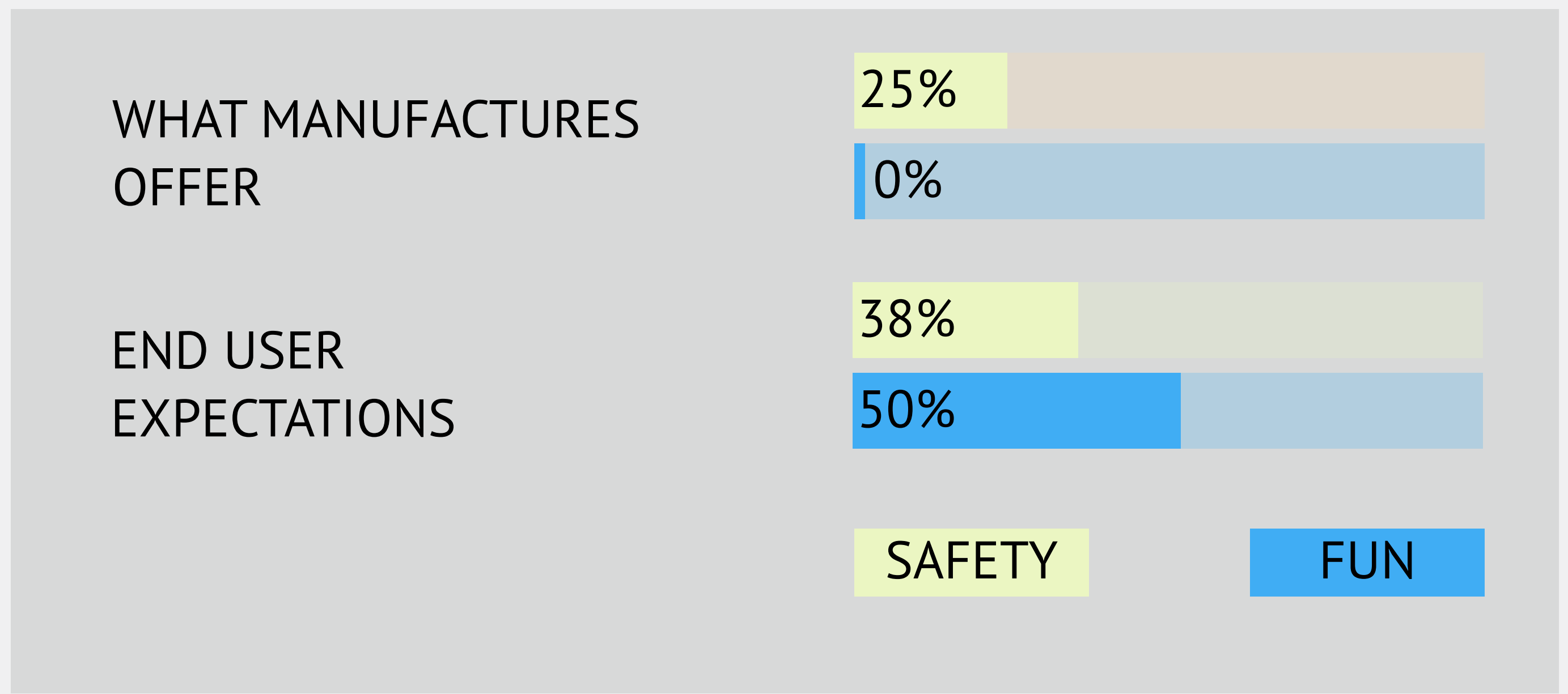
EUROPE MOPED MARKET



MOPED EV MARKET DIVIDED BY SEGMENTS

SHARING	PERSONAL	OTHER
10% (9k)	83% (71k)	7% (6k)

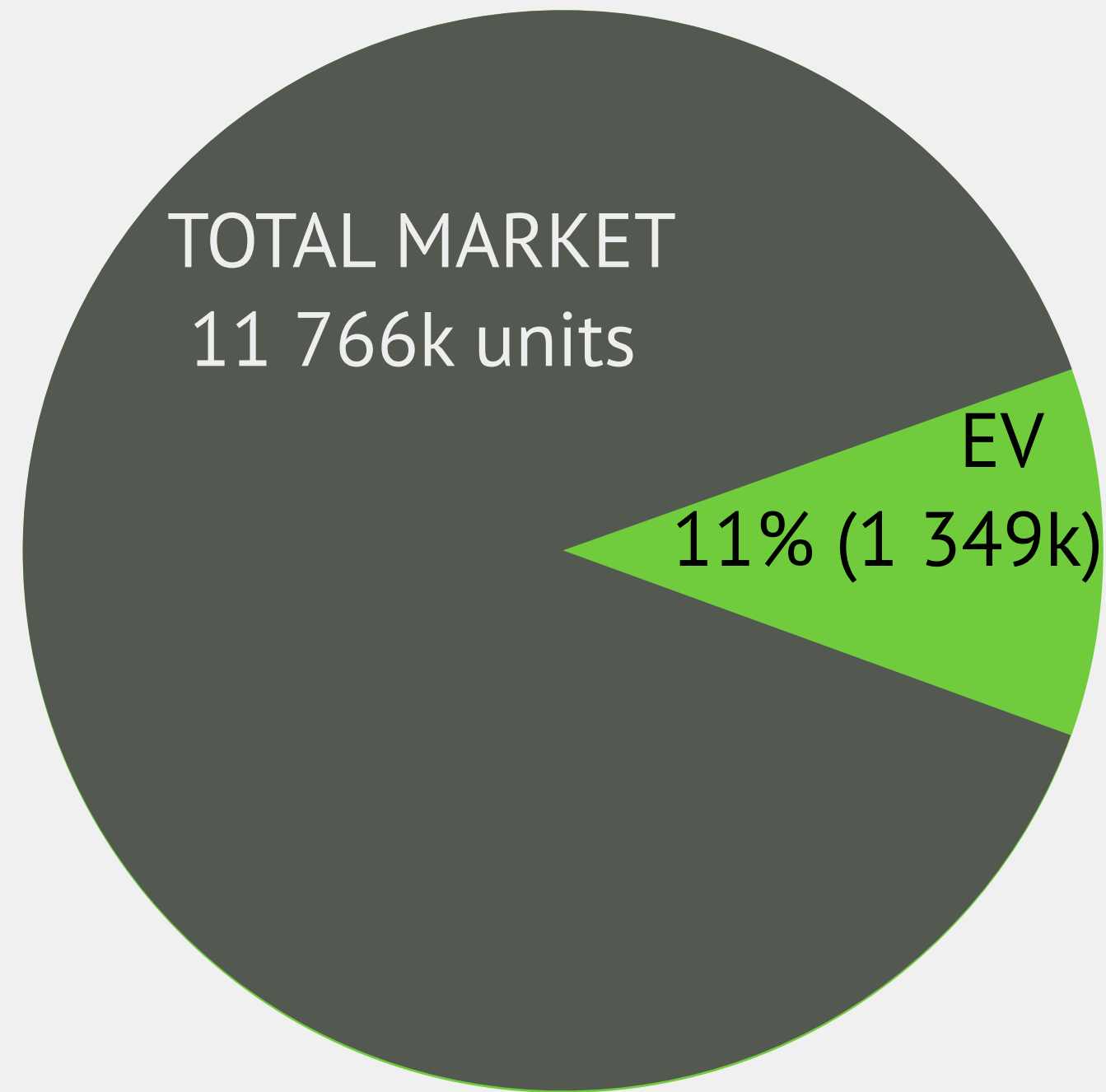
VALUES IDENTIFIED THROUGH THE END USER QUESTIONNAIRE AND DIALOGUE WITH BUSINESSES



Manufacturer Mimito has in-built speaker used for emergency alerts, parking assistance but without Bluetooth connection for listening to music

End user do not pay attention to safety feature but prefer fun. It can be created with startups car manufactures, while their partnership are not fully formed

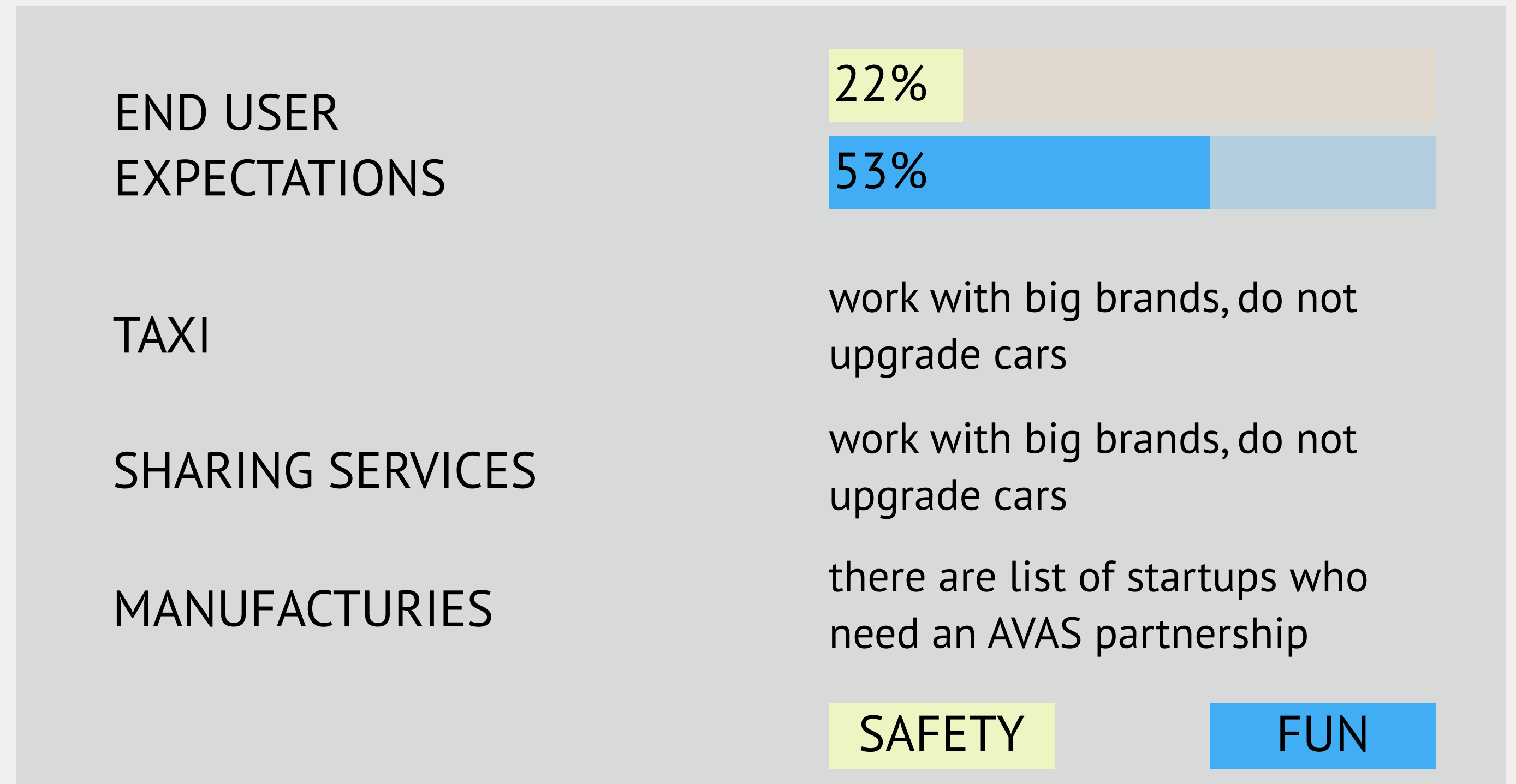
EUROPE CAR MARKET



CAR EV MARKET DIVIDED BY SEGMENTS

SHARING	PERSONAL	TAXI	OTHER
38% (506k)	31% (419k)	1% (13k)	31% (412k)

VALUES IDENTIFIED THROUGH THE END USER QUESTIONNAIRE AND DIALOGUE WITH BUSINESSES



# Sources



Market analysis

New registration of vehicles, average age and electric share, share by end-user segments:

[acea.auto](#); [acea.auto](#)

[Eurostat](#); [Eurostat](#);

[Countryeconomy.com](#)

[Motorcycle industry](#)

[Statista](#); [Statista](#)

[European shared mobility index](#)

[Bicycle association](#)

[LEVA report 2021](#)

[Cycling UK](#)

[taxi situation in Europe](#)

[deloitte](#)

[electrive.com](#)

Other indicators, used in model

[GDP by countries](#)

# Research for THOR AVAS



This report was prepared by the company's services and at the request of THOR AVAS. All sources were open or gave voluntary consent to participate in the survey.

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